# Interdisciplinary Instrumentation Colloquium

# Semiconductor Radiation Detector Materials: Facts versus Fiction

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Date: Wednesday, February 15, 2006
Time: 4:00 PM sharp (refreshments at 3:45)
Place: LBNL, Building 50 Auditorium
(directions at http://InstrumentationColloquium.LBL.gov)

A small number of semiconductors are well suited for the formation of high energy resolution solid state ionization chambers in the forms of reverse biased p-n or p-i-n diodes. Several stringent property requirements have to be met in order to obtain desirable performance. Despite the very large number of elemental and compound semiconductors with bandgaps ranging from close to 0 eV to 5.5 eV (diamond), only a few have been perfected to the degree necessary for radiation detection. In general there are two kinds of approaches taken to overcome deficiencies. One is to circumvent the problems with clever charge collection geometries and/or electronics, the other tries to eliminate the problems. Examples of both will be discussed. A realistic summary of potential candidate materials for various applications will be given.

Presentations (pdf files) and dates of future colloquia are posted at
http://InstrumentationColloquium.LBL.gov

Suggestions for speakers and topics are welcome. Please contact
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